(2)

AN ESSAY

On the Nature and Properties of

WATER.

Shewing its prodigious Uſe;

And proving it to be an

UNIVERSAL MEDICINE,

Both for preventing and curing

The Diſeaſes to which the Human Body is ſubject.

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Phyſician to his preſent Majeſty the King of Pruſſia.

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ON THE

VIRTUES and MEDICINAL USES

OF

WATER.

HOW earneſtly a Medicine, capable of ſubduing all Diſorders, of whatever Nature, has been deſired, is ſufficiently known; and doubtleſs immortal Honours ought to crown the Man, who ſhould be ſo fortunate as to diſcover it; ſince the Recovery of the Sick, and the Safety of Mankind in general, are ſo nearly connected with a Diſcovery of this Nature. But ſince we have not hitherto found a Medicine capable of ſubduing with Certainty *any one* Species of Diſorder, ſo we have the greater Reaſon to deſpair of finding one capable of eradicating and baffling the *whole Train* of Diſeaſes to which Mankind are ſubject; for if we attentively reflect on the Difference of Conſtitutions, on the numerous and often contrary Cauſes of Diſeaſes, and on the Virtues of Medicines varying according to the different Conſtitutions of the Patients to whom they are adminiſtered, we ſhall eaſily perceive, that it is in vain to rack the Invention, and ſpend our Time in the Purſuit of an univerſal Medicine.

But if there is in Nature a Medicine that deſerves the Name of *Univerſal*, it is, in my Opinion, *Common Water*: The Uſe of this is ſo general, and ſo neceſſary to us all, that we can neither live, nor preſerve our Bodies ſound and healthy, without it: For it guards againſt every Diſeaſe, protects and defends the Body from all kind of Corruption that may prove fatal to Life, and anſwers all poſſible Intentions of Cure; ſo that, without it, no Diſorder, whether chronical or acute, can be happily and ſucceſsfully removed. For Confirmation of this Opinion, I ſhall not inſiſt on the medicinal Springs, whether hot or cold; nor attempt to prove their ſalutary Virtues in ſubduing various Diſorders; but confine myſelf entirely to common Water, though of the beſt and pureſt Kind, the univerſal Uſe of which I at preſent deſign to recommend.

Since, therefore, I am to conſider Water as a univerſal Medicine, in preventing and curing Diſeaſes; and ſince I intend to prove, that it is ſo, by the ſtrongeſt and beſt Reaſons I poſſibly can, I think it will not be improper to premiſe a few Things, with regard to the natural Neceſſity our Bodies lie under, of being ruined or deſtroyed one Time or other; that theſe Things being known, we may be able, with greater Accuracy, to diſcern what Diſeaſes are curable, and what are not. As to the natural Neceſſity of dying, it is ſufficiently known, that the Duration of our Bodies, and a Prevention of that Putrefaction to which they are ſo naturally diſpoſed, depend entirely upon the perpetual and uninterrupted Circulation of the Blood and

Humours; for while this Circulation is entire and unobſtructed, ſo long we are ſaid to be alive; but in Proportion as it decreaſes, or is impaired, we make gradual Advances towards the Period of our Exiſtence. It is therefore this Motion alone, that guards the Body againſt Corruption, becauſe it hinders that State of Reſt, which is the Cauſe and Foundation of all Putrefaction, from taking place in the heterogeneous Fluid, with which the Parts of all Animals abound.

Our Bodies would doubtleſs enjoy an eternal Duration, if we could for ever preſerve and maintain the Circulation of the Blood; but ſince human Weakneſs, and the wretched Condition of our mortal Nature, render this impoſſible, it is at leaſt worth while to enquire into the Cauſe which may produce a Deficiency or Decreaſe of this Circulation, which, in my Opinion, is as follows.

This vital Circulation of Humours, is carried on by Organs and Canals; the elaſtic or ſpringy Fibres of the Muſcles, which are furniſhed with a ſucceſſive and reciprocal Dilatation and Contraction, conſtitute the Organs. Theſe Organs are Veſſels, ſome of larger, and others of leſſer Diameters. When, therefore, at any Time, the Springineſs and Strength of the Fibres are ſo far diminiſhed, as not to bear a due Proportion to the Quantity of Humours neceſſary to be moved; and when theſe Humours are not quickly and expeditiouſly carried thro' the ſmalleſt Tubes, Stagnations of the Humours muſt inevitably happen in the capillary, or minute Veſſels; and hence Putrefactions ariſe, thoſe fruitful Sources of Diſorders and Death.

For as in all Machines, the Springineſs and moving Forces of the conſtituent Parts are weakened and impaired by a Change in the Matter of which the ſaid Machines are made; ſo it alſo happens in our Bodies, that the Fibres, which alone are the Inſtruments of Motion, become, in Proceſs of Time, thick, hard, ſolid and dry: For this Reaſon, they not only move with Difficulty, but the Pores and minute Paſſages, being by that Means rendered narrower, hinder the Fluids from being carried thro' their Channels in an equal and uniform Courſe. This is ſufficiently evident from the Fleſh of old Animals, which, by Reaſon of its Hardneſs and Solidity, requires a ſtronger Heat, and longer Time, to render it ſoft and tender, than that of young Animals. Hence we reaſonably conclude, that if the ſame State, the ſame Motion of the Fibres and Veſſels, and the ſame Apertures in the Pores and minute Paſſages, could be preſerved, Life might of courſe be protracted for ever, if external Cauſes, and foreign Degrees of Violence did not interfere to terminate it. That this ſurprizing Effect may poſſibly be produced, either by Medicines, or a proper Regimen, is a Fact which can by no means gain the Aſſent of thoſe who are ignorant of the Virtues and Qualities of natural Bodies. It is however not only probable, but ſtrictly true, that many have fallen ſhort of that Period of Life and Duration, which the natural Temperament and Conſtitution of their Bodies ſeemed to promiſe, by either not knowing, or deſpiſing thoſe Rules, which if obſerved, would, from the very Nature of the Thing, have procured them that Bleſſing; ſo that the greater Part of the human Species, either by exorbitant Paſſions, Intemperance with regard to the Non-naturals *, or a criminal Neglect to diſtinguiſh between Things of a ſalutary and noxious Nature, unavoidably ſhorten their Days, and render their very Exiſtence a Foundation for Diſtreſs, Calamity, and Miſery.

Having thus explained the natural and internal Cauſe and Origin of Death, it will not be improper to aſſign a few Reaſons why ſome Diſeaſes are incurable, and of ſo ſtubborn a Nature, that they will not yield to the moſt powerful Remedies, adminiſtered with the greateſt Skill. Now that there is a certain Analogy and Proportion between the Agent and the Patient, and that Effects can only be produced by their proper and

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* By this Word, Phyſicians mean Meat and Drink, Sleep and Watching, Motion and Reſt, Retention and Excretion, and the Paſſions of the Mind.

adequate Cauſes, are Truths ſufficiently proved and explained, both by Reaſon, and the Laws of Motion: When therefore obſtinate Obſtructions of the Veſſels, Indurations of the Viſcera, Effuſions of the Humours into the Cavities of the Ducts, or Paſſages, and conſequent Putrefactions happen, what Phyſician is able to diſcover Medicines of ſo powerful and efficacious a Quality, as to ſubdue and remove theſe Diſorders? Who can put a ſeaſonable Stop to the remote and internal Inflammations of the more noble Parts, and the Mortifications that ſucceed them? Or what Man is there found among all the venerable Profeſſors of the healing Art, who can, with Certainty calm the preternatural or irregular Commotions of the nervous Syſtem? If I could once find the happy Man, who, by any ſort of Medicines, could perform ſuch miraculous Cures, I would not only pronounce him a ſecond *Æſculapius*, but loudly proclaim, that he was ſent from Heaven as a common Bleſſing to the Earth; ſince I am firmly perſuaded, that no acute Diſtemper could poſſibly prove mortal to the

Patient who ſhould have the good Fortune to be under his Care.

We muſt alſo, on this Occaſion, enquire whether there are in Nature, Medicines peculiarly adapted and calculated to remove particular Diſorders. It is univerſally known, that ſome Medicines are, even in our Days, highly extolled as Specifics againſt certain Diſeaſes. Thus the Peruvian Bark is eſteemed a Medicine of divine and ineſtimable Efficacy againſt Fevers. Quickſilver is highly extolled againſt a Lues Venerea. Opium is ſaid to be the moſt efficacious Aſſuager of all kinds of Pain. Steel is called the ſovereign Reliever of the hypochondriac. Sulphur is accounted a moſt valuable Pectoral. Caſtor is judged to have the moſt happy Influence on the Nerves. Bitters are applauded as the moſt ſuitable Remedies in dropſical Caſes, and ill Habits of Body. Nitre is ſaid to be of uncommon Efficacy, in allaying feveriſh Heats. But though theſe Medicines are juſtly diſtinguiſhed on account of their Virtues, and their Praiſes deſervedly celebrated, yet any Perſon who has been for a conſiderable Time employed in the Practice of Phyſic, cannot fail to obſerve, that they are by no Means ſufficient to remove the reſpective Diſorders to which they are appropriated: For who does not know, that almoſt all Diſtempers are nouriſhed and fomented by different, and often by contrary Cauſes? Who is ignorant, that the ſame Diſeaſes, in different Stages, are attended with a different Series of Symptoms; and that, according to theſe, there is more or leſs Danger in the Caſe? Who is not appriſed that there are different Conſtitutions; and that on theſe the Actions of Medicines vary very remarkably? Hence it muſt neceſſarily follow, that one and the ſame Medicine muſt produce different, and even contrary Effects, according to the different Conſtitutions of the Patients to whom it is adminiſtered; for it is carefully to be adverted to, that Medicines do not act according to their own inherent Qualities, but according to the Conſtitution of the Patient to whom they are given; or, in other Words, the Force of Remedies is the Reſult of a mechanical, mutual, and reciprocal Action and Re-action of Medicines and Conſtitutions; ſo that if a Medicine acts upon the Body, the Body returns the Favour, and acts in like Manner upon the Medicine. Hence we may judge, how daring and impious the Practice of thoſe is, who, not regarding the Diverſity of Conſtitutions, the Cauſes of Diſeaſes, and other Circumſtances, invariably preſcribe in the ſame Diſorder, the ſame Remedy, exhibited in the ſame Manner, as blundering and unſkilful Phyſicians do, to the great Reproach of Phyſic, and the great Emolument of Undertakers, Grave-diggers, and all that Claſs of Men, who live by burying the Dead: For the Phyſician who carefully conſiders the above Obſervations, will not readily adhere to one and the ſame Remedy, in one and the ſame Diſorder, unleſs all Caſes are directly alike.

It now remains that I fix and aſcertain the preciſe and determinate Senſe, in which

Water may be ſaid to be an univerſal Medicine. Now I affirm, that Water is excellently adapted to all Conſtitutions, and even at all Times and Seaſons whatever; that there is not in Nature, a more noble or efficacious Preſervative againſt Diſeaſes; that in acute, as well as in chronical Diſorders, it affords a moſt certain Relief; and laſtly, that its Uſe anſwers all poſſible Intentions with regard to preſerving againſt, and curing Diſtempers: But ſince there is a great Difference between different Waters, we are carefully to enquire which are beſt calculated for anſwering this medicinal Intention; for it is not to be denied, that the Nature and Properties of particular Waters, differ ſo far as to be eaſily diſtinguiſhed, even by the Taſte of ſuch as accuſtom themſelves to drink Water. But the beſt way of diſtinguiſhing them is, by chemical Trials, their Weight, and mixing them with various Subſtances. It muſt not be imagined to be a homogeneous or ſimilar Fluid; numerous Experiments prove it to be a Mixture of different Parts. Thus all Waters contain an aerial or æthereal Principle, on which their elaſtic or ſpringy Property ſeems entirely to depend; for all Waters are more or leſs expanſive and contractive, as they contain more or leſs Air or Æther. This evidently appears in the Water-Thermometer, where the included Liquor fills a greater or leſſer Space, in Proportion to the greater or leſſer Degree of Heat applied to it: For it is the Nature of all Liquors to admit a great Quantity of the æthereal Fluid when they are heated, and again eject it as they are cooled; as we know by particular Experiments made in a very ſevere Winter. The Quantity of Air or Æther reſiding in Water, cannot perhaps, be better determined, than by Means of the Air-Pump; for the more ſubtile Waters, placed in an exhauſted Receiver, throw up numerous Bubbles, and, if ſomewhat heated, flow over the containing Glaſs; as, on the contrary, thoſe which are groſſer and more ponderous, afford fewer Bubbles in the exhauſted Receiver.

Waters alſo appear to conſiſt of a lighter and heavier Part; and the former eaſily riſes firſt in Diſtillation; while the heavier and groſſer Parts, require a greater Degree of Heat to bring them over the Helm. Whence it follows, that Waters loſe their more ſubtile Parts in boiling, and leave the cruder and leſs uſeful ones behind; as is known to all thoſe who are curious in making Coffee: For if the Berries, when ground, are put into Water that has been long boiling, the Liquor ſo made, becomes leſs quick and pleaſant to the Taſte. It has alſo been obſerved, that ſome Waters riſe much faſter than others in Diſtillation. Waters alſo differ extremely in their Gravity, as appears by the Hydrometer, or Water-Poiſe; thoſe which abound with Earth and Salts, cauſing the Inſtrument to ſink leſs deep than ſuch as are pure: But Diſtillation is one of the beſt Methods of diſcovering the Purity of Waters. as it not only renders the Quantity, but alſo the Quality evident to the Senſes. It is ſurpriſing to ſee what a large Maſs of earthy or ſtony Matter remains after the Diſſolution of ſome Waters. I once diſtilled two Quarts of Spring-Water in a Glaſs Body, to a Dryneſs, repeating theOperation ten times in the ſame

Veſſel; and by that means obtained a hard ſtony Cruſt at the Bottom of the Veſſel, as thick as the Back of a Knife. Moſt Waters contain a chalky Earth, ſome an Oker, ſome a ſtony Matter, and others a Portion of common Salt. But the true Way of examining whether Waters are pure, is by chemical Experiments; two of which I have ſingled out for my own Uſe, and recommend to others, as exactly diſcovering the Purity or Impurity of Waters. The firſt is by dropping into them Oil of Tartar; and the ſecond a Solution of Silver in Aqua-fortis. If the Waters are pure, ſuch as Rain-water, Water diſtilled, and ſome Sorts of Spring-water, no Alteration will follow on dropping theſe Liquors into them; but if groſs and impure, they turn milky with Oil of Tartar, eſpecially if they abound with a chalky Earth; and the Solution of Silver turns impure Waters thick, grey coloured, and, if they participate of Iron, almoſt red.

The Effects of Waters alſo manifeſt their Nature, Subtility, and Purity: Thus thoſe that are light and ſoft, ſeem beſt for mollifying the Bones of Animals, and the boiling of Sea-Fiſh. The Whitſters and Bleachers find a remarkable Difference in Waters; the ſofter and fatter Sorts thereof ſerving better to waſh and bleach, than ſuch as are ponderous, hard, and take Soap with Difficulty. The Bakers find, that the more ſoft and ſubtile Waters make their Bread riſe well. The Gardeners obſerve, that ſuch Waters as are light, ſubtile, and ſpirituous, are much better for their Plants, than ſuch as are hard. The Maſons, Makers of Terrace, and Figures in Plaiſter of Paris, find hard Water the beſt for their Purpoſe, and can ſcarcely work with ſuch as are ſoft, ſo as to give their Work a proper Degree of Strength and Firmneſs. The Chemiſts find a great Difference in Waters; thoſe of Rain being beſt ſuited to waſh their Magiſteries and metalline Powders, as readily diſſolving the Salts, which hard Spring-waters will ſcarcely touch. We daily obſerve, in the domeſtic Operations of Brewing, Waſhing, making

Tea, &c. that the more ſubtile and ſoft Sorts are better for theſe Purpoſes than Spring-Water.

But for medicinal Purpoſes, we prefer Rain-Water, as what is naturally diſtilled by the Sun, and thus rendered ſubtile, and fitter for Solutions, Infuſions, Extracts, and all internal Uſes. Only this Water being mixed with various mineral, vegetable and animal Exhalations, is thence rendered eaſily corruptible, if expoſed to the free Air, or ſuffered to ſtand long in Wooden Veſſels. The Rain that falls in the Month of *March*, will keep longer, as not then receiving ſo many Effluvia. The better to fit this Water for medicinal Uſe, it ſhould be kept in earthen Veſſels, ſtopped cloſe; and thus, if it be collected, not in Cities and Towns from the Spouts of Houſes, but in the open Fields, it may be kept ſound and fit for Service ſeveral Years.

Next to Rain-Water, in point of Goodneſs, is that of Rivers; but as Rivers proceed from the Springs ſituated in high and mountainous Places, and as Rains increaſe theſe Springs, which running over vaſt Tracts of Land, abſorb many different Matters from the Earth; hence Rivers become more turbid and impure, the larger Tracts of Land they waſh in their Courſe. Add to this, that they take up numerous heterogeneous Parts from the Bottom they flow over, whence there often ariſes a conſiderable Difference between Rain and River-Water. Laſtly, Rivers being perpetually expoſed to the free Air, and the Action of the Sun, have their moſt ſubtile Parts exhaled and raiſed into the Atmoſphere, ſo as to ſupply the Matter of Clouds and Rain.

There is alſo a great Difference between the Waters of Rivers; for thoſe that have a ſwift Courſe, or run violently down from the Mountains, where they riſe, into the lower Plains, are very different from thoſe where the Courſe is ſlow and gentle, and which riſe in lower Places. Thus the rapid Rivers uſually afford a light and ſubtile Water, not very ſubject to Corruption; tho' ſomewhat improper for the feeding and nouriſhing of Fiſh, becauſe the Rapidity of the Motion prevents the Sperm of the Fiſh from adhering to the Banks, ſo as to be there animated by the Heat of the Sun. But if theſe rapid Rivers do not greatly abound with Fiſh, the few they produce are excellent and well taſted: Thus the *Rhine* and the *Rhone*, which riſe from the higheſt Mountains of the Country of the *Griſons*, are found to be much lighter than the Waters of other Rivers. And it is remarkable, that the Ships coming out of the River *Mayne* into the *Rhine*, draw much more Water in the latter than in the former: And indeed the Waters of both the *Rhine* and the *Rhone*, appear, on being examined hydroſtatically, to be nearly equal in Lightneſs to Rain-Water. And as both theſe Rivers are very rapid, their Waters are by that Means rendered leſs corruptible, and therefore allowed to excel the Waters of all other Rivers, for internal medicinal Uſes. And we are accordingly told by a good Writer on the Water of the *Rhone*, that " if "it be kept in Wine-Cellars, put up into "large Earthen Jars, ſo as there to depoſit its "Sediment, for ſome Weeks or Months be- "fore it is drank, it thus becomes pure and "excellent, and will afterwards keep many "Years, or even an Age, without ſpoiling "or corrupting *".

The Rivers that flow gently, differ from the former, not only on account of the immenſe Quantities of Fiſh they breed; but alſo becauſe they generally run on fat clayey Bottoms, or ſuch as afford proper Retreats and Nutriment to Fiſh; whence ſuch Rivers are not ſo clear and Cryſtalline as thoſe of a rapid Courſe: But then ſuch Waters are of a ſofter Nature, and ſerve for the Purpoſes of Waſhing, Fulling, Scouring, &c. without any conſiderable Addition of Soap. Hence it follows that River Waters are not all alike, or equally proper for medicinal Purpoſes: Thoſe that ſhould be choſen for that Purpoſe, are clear, light, do not eaſily

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* *Jacob. Spon. in Obſervation. circa Aqua Rhodan. in Act. Erudit. Ann.* 1683. P. 519.

corrupt, and exhibit no Alteration on the Addition of Oil of Tartar, or any metalline Solution. It muſt be conſtantly obſerved, that Rivers of a rapid Courſe, are univerſally more wholeſome than thoſe which flow with a ſlow and gentle Current.

Spring-Waters are alſo ſometimes obſerved to differ in their Virtues; for according to the different Nature of the Soil, or the earthy Matters they meet with or imbibe, they receive a different Nature and Diſpoſition; whence we ſeldom find Springs of a perfectly pure and light Water. The greateſt Part of them leave, on Diſtillation, a copious earthy Subſtance. There are but few that do not turn thick with metalline Solutions, or alcaline Salts. Some of them contain common Salt; and others a ſubtile, volatile Vitriol. If they contain common Salt, Oil of Tartar will diſcover it, by its turning milky; if they contain a vitriolic Principle, the Infuſion of Galls will turn it black. Others again contain Particles of Iron, and thence acquire a ſtyptic Taſte, and on ſtanding ſome Time in a Bottle, depoſit an Oker. It is therefore the Buſineſs of Art and Induſtry, out of ſo large a Number of Springs wherewith Nature ſupplies us, to diſcover the moſt wholeſome, which are known by their Lightneſs, Tranſparency, Purity, long Keeping, and the Trials abovementioned. There is another Difference obſervable in Spring-Waters, ſome being hard and others ſoft, the latter will keep the longeſt, and will not ſo eaſily freeze as the former. Both of them are wholeſome and medicinal, if properly adapted to the Diſeaſe and Conſtitution of the Patient.

Having thus ſhewn which Waters are moſt proper for medicinal Uſes, and how they are diſtinguiſhed and examined, we ſhall proceed to prove the Excellency and univerſal Virtue of pure Water.

Our firſt Poſition is, That pure and light Waters are agreeable to the different Natures and Conſtitutions of all Men; for ſince the Circulation of the Fluids through the Canals and fineſt Veſſels, is what preſerves and ſecures the Body from Corruption, and keeps the Blood and Juices in a thin moveable State, Water muſt be neceſſarily appropriated to the Continuance of Life. The Fluids of the Body ſerving to Nutrition and the vital Offices, and of which the Solids alſo are compoſed, actually conſiſt both of Solids and Fluids. That there are ſolid Parts contained in the Blood, is evident from drying it; and that theſe Parts are of different Natures, ſome ſaline, others oily, ſome mucilaginous, and others earthy, is evident to the Senſes by the inflammable Property they acquire after Evaporation, and other chemical Experiments. In ſhort they are a Number of heterogeneous or diſſimular Parts, united into one whole, which is very corruptible, when put into a State proper for Corruption; that is a State of Warmth, Reſt, and Moiſture. To prevent the Fluids from thus corrupting, and conſequently infecting and changing all the other Parts of the Body, it is neceſſary they ſhould never ſtagnate or collect together, for otherwiſe Putrefactions would immediately enſue: Whence theſe ſubtile ſolid Particles both oily and earthy, ſhould not only be kept in perpetual Motion among themſelves, but alſo circulate in a progreſſive Motion through the fineſt Tubes of the Body, that the ſolid Parts of the Blood may be divided into extremely fine Globules, by the Motion of Attrition, or Action and Re-action between the Juices and fibrous Parts. Whence we ſee the Neceſſity of an aerial or æthereal Fluid, and elaſtic Principle, being joined with a large Quantity of an aqueous Fluid; that is, the Neceſſity of pure Water to ſecure this indiſpenſible Effect. And hence it is, that upon examining the Blood taken from a Man in Health, we find, at leaſt, two Parts of a Fluid for one of a dry and ſolid Matter; for I have frequently obſerved twelve Ounces of Blood to contain eight Ounces of a liquid, and four of a ſolid Subſtance. It is alſo evident that the Blood contains a large Quantity of a ſubtile, aereal and æthereal Principle, from its Bubbling, when placed under an exhauſted Receiver, ſo as to run over the Edges of a cylindrical Glaſs, whereof it at firſt filled only one Half. From the whole therefore we infer, that nothing is more wholeſome, nothing better fitted, or more neceſſary to preſerve Life than Water; which is ſo agreeable to the Nature of the human Body, that it cannot ſubſiſt without it, nor even Life itſelf be long preſerved.

Our next Poſition is, that no Remedy can more effectually ſecure Health, and prevent Diſeaſes, than pure Water. If we ſtrictly enquire into the Cauſe of Health, we ſhall find it to be an equable and free Circulation of the Juices through all the Canals of the Body, even the fineſt that lead to the excretory Ducts. For by this means it is, that what proves ſerviceable and proper for Nutrition, remains within, ſeparated by the proper Strainers; and what would prove either uſeleſs, corruptible, or inconvenient to the Body, is diſcharged. And here it deſerves the utmoſt Attention, that the Excretions of the Body do not ſo directly, ſimply, and abſolutely regard Life, as they indirectly regard Health, and the Exerciſe of all the Functions and Offices; becauſe Health, and even Life itſelf may be endangered, without any Fault in the Excretions. Thus it is obvious, that the natural Functions of the Body are ſtrongly diſordered by violent Paſſions of the Mind, extreme Pain, Inflammation of the Stomach, and the ſwallowing of Poiſon. Nor are the Excretions ſo much to be regarded in the moſt obſtinate chronical Diſeaſes, as the Obſtructions of the glandular Parts, the Indurations, Corruptions, and Mortifications of the Viſcera, and Extravaſations of the Humours: So likewiſe in acute Diſtempers, the inflammatory Diſpoſition of the Blood is principally to be regarded. It is therefore an equable Motion of the Blood and Juices that maintains Health, promotes the Excretion of unneceſſary Subſtances, affords a convenient Nouriſhment to the ſolid Parts, and furniſhes the Nerves and Fibres with that remarkably ſubtile Fluid, by means of which they feel and move. But whenever this free and equable Motion is obſtructed, whether by an Overcharge of Humours, their Tenacity, or by the Weakneſs of the Spring or Tenſion of the moving Fibres, it becomes the immediate Occaſion of Diſeaſes, eſpecially thoſe we term chronical; for from theſe Cauſes proceed Stagnations of the Juices in the larger and ſmaller Veſſels, Obſtructions in the excretory Ducts, and Indurations in the glandular Parts; theſe are ſoon followed by great Impurities of the Juices, cauſing Pain and convulſive Diſorders; and, not long after, by Putrefaction, the Bane of Health, and the direct oppoſite to Life. And thus are the true Cauſes of Diſeaſes formed in the Body.

Every one who perceives the Juſtneſs of this Deſcription, will readily grant, that a proper Fluidity of the Blood is highly neceſſary to procure a free and equable Circulation; by means whereof the Veſſels are kept always open, Obſtructions prevented, Excretions ſecured, Stagnations and Impurities of the Juices prevented, and the Cauſes of Diſeaſes cut off. And whether there be in Nature a more proper Remedy for procuring this Fluidity to the Blood, we leave to the Judgment of ſober and experienced Phyſicians. To us it appears, that a pure and ſubtile Water exquiſitely divides the ſolid and viſcid Parts of the Blood and Juices, ſo as to prevent their coagulating, or running together; at the ſame Time it diſſolves the recrementitious Matters of various Kinds, whether earthy, ſaline, or oily, and diſcharges them by the proper Outlets.

And hence we conceive proceeds the Reaſon why Drinkers of Water, provided it be pure and excellent, are more healthy and longer lived, than ſuch as drink Wine, or Malt-Liquors; and why it generally gives them a better Appetite, and renders them plump and fleſhy. For certainly Water is a very proper Menſtruum for diſſolving the Aliment, extracting its Chyle, or nouriſhing Part, and carrying it through all the innermoſt and fineſt Canals of the Body. Beſides this, it readily waſhes off and diſſolves that tough and viſcous Slime, which lines the glandular Coats of the Stomach and Duodenum, or firſt Diviſion of the Inteſtines, whereby the diſſolving Juices of the Bowels, which are the immediate Inſtruments of Digeſtion, may more plentifully mix with the Food, and perform their Office. It is a common Opinion, that the drinking of Water is pernicious to thoſe who eat Fruit: But this is a great Miſtake; for in *Spain*, *Portugal* and *France*, Water is the common Liquor; and yet thoſe People freely eat Fruit all the Summer, without any Inconvenience. Again, thoſe who drink Water are obſerved to have much ſounder and whiter Teeth than others; for Putrefaction and Corruption of the Teeth is cauſed by the Scurvy, a Diſeaſe prevented by the drinking of pure Water, which actually cleanſes and waſhes the Blood, and diſcharges its Impurities. Add to this, that the Drinkers of Water are briſker and more alert in all the Actions both of Mind and Body, than ſuch as uſe Malt Liquors, moſt of which produce clammy, viſcid, and ſluggiſh Juice, hardly capable of paſſing through the exquiſitely fine Veſſels of the Brain and Nerves; whence proceed Indolence and Weakneſs of the Body, and an Indiſpoſition and Dulneſs of the Limbs, both to Senſe and Motion. And as this plainly appears to be Matter of Fact, it is the more ſurprizing, that the Drinking of pure Water, which is ſo conducive to the Preſervation both of Life and Health, ſhould be ſo perverſely, and, as it were, unnaturally nauſeated by the People of our Country, while it is as ſtrongly coveted and admired in other Nations. Such Malt-Liquors as are thick, and highly nouriſhing, lay the Foundation of many Diſorders among the Inhabitants of the Northern Countries, eſpecially where the Uſe of Brandies, Spirits, and ſtrong Waters prevails. It is certainly much better for Perſons of delicate Conſtitutions, and ſedentary Lives, to accuſtom themſelves to drink the fineſt and pureſt Water, either alone, or mixed with Wine, to render it more acceptable.

Having thus conſidered the ſingular Efficacy of Water, by way of Prevention, we come next to examine what it will perform in the Cure of Diſeaſes. Phyſicians divide all Diſtempers into acute and chronical. Of the acute Kind the principal are Fevers; which, from the Structure of the Body, and the Laws of Motion, appear to be an Increaſe of the Blood's Velocity and Force, ſo as to diſtend both the ſolid or fibrous and fluid Parts of the Body beyond their natural Size; this Increaſe of Motion has a Tendency either to overcome and diſcharge the Cauſe of the Diſorder, or to deſtroy the Machine itſelf. Whence there enſues either Recovery, Death, or a Depravation of the Machine, when the Diſeaſe terminates in another. And thus Nature, which is often her own beſt Phyſician, ſometimes alſo produces Diſeaſe and Death. But here we muſt by no means confound the rational Soul with Nature; which is a Word we uſe to ſignify the Structure, Mechaniſm, and Contrivance of the Body, acting with certain Powers, according to certain neceſſary mechanical Laws, aſſigned it by its Maker. A Phyſician therefore, in the preſent imperfect State of Medicine, can do no more than ſupply a proper Matter to this augmented Force in Fevers, during the whole Time they thus regularly continue; for they have their own natural Periods, which cannot hitherto be ſafely ſtopped by Art. This increaſed Motion and Diſtention is attended with a great Heat, which violently diſſipates the fluid Part of the Blood and Juices, ſo neceſſary to Life; the principal Intention therefore, is to ſupply this fluid Part in proportion as it waſtes. And, as the Tendency of this increaſed Motion is to break through the Obſtructions that cauſe the Diſorder, the Blood can by no Means make its Way, unleſs ſufficiently thinned and diluted with a proper Fluid; but thus aſſiſted, it may allay the Heat and Inflammation, propel the ſtagnating Juices, and diſcharge the offending Matter that cauſes the Miſchief. And Experience ſhews, that if Water be not the only Thing, there is no better Remedy yet found, than a free and copious Uſe of it. Whence *Hippocrates*, and others, highly recommend an aqueous Ptiſan, or medical Drink for this Purpoſe. And accordingly, by this alone, with the Aſſiſtance of Reſt and temperate Warmth, the moſt violent Fevers have been frequently cured, without any other Medicine. All that the beſt Phyſicians do in theſe Caſes, is either to bleed at the Beginning, where the Body is full, or to exhibit an Emetic, if the Diſtemper is ſeated in the firſt Paſſages; or to preſcribe a Sudorific, in order to expel the offending Cauſe in the moſt expeditious Manner; but after this, through the whole Courſe of the Diſtemper, they give nothing more than cooling, moiſtening, and perſpirative Medicines. The Caution required in the Uſe of Water for this Diſtemper, is not to give it too cold, eſpecially near the Criſis, and when there is Reaſon to fear an Inflammation in the firſt Paſſages, nor when the Body is ſtiff and rigid, and the external Parts parched and bound up; but to wait for the Time when there appears a Diſpoſition to ſweat; for then it is always proper to give Water in large Quantities.

This is agreeable to the Advice of the beſt Phyſicians, and particularly inſiſted upon by *Lommius*, in his excellent Diſcourſe on Fevers.

Thoſe called chronical Diſeaſes generally ariſe from an Obſtruction of the Viſcera and glandulous Parts, or an Over-Charge and Foulneſs of the Juices, with the Stagnation thereof in the larger Veſſels: All which, according to the Rules of Reaſon and Experience, are to be removed in order to complete the Cure: But to produce this Effect, there is not a more ſerviceable Remedy than pure Water. How eminently ſerviceable the medicinal Waters, both of hot and cold Springs, are, for this Purpoſe, is well known from Experience. But the greater Part of their Efficacy, in this Reſpect, is, beyond all Diſpute, owing to the Quantity of pure elementary Water they contain; for, it would be inſignificant to exhibit, in theſe Diſtempers, the mineral volatile Spirit, and the Salt which ſuch Waters contain, without that purely aqueous Part. And accordingly, there are numerous Inſtances of pure and light Water, which, without containing any mineral Ingredients, prove of extraordinary Efficacy in the Cure of chronical Diſeaſes. The Effect therefore cannot poſſibly be aſcribed to any Thing elſe, but the pure Water. Of this kind, there are numerous Springs in *Germany*, the Waters of which, being pure and ſubtile, though plentifully abounding with Air and Æther, remove moſt chronical Diſtempers; particularly the Stone, the Gout, the Rheumatiſm, the Scurvy, and Weakneſs in the Limbs; and, by procuring the requiſite Fluidity to the Humours, they remove Supreſſions of the Hæmorrhoids and Menſes.

As there is therefore ſufficient Reaſon to perſuade us, that the Wholeſomneſs of many Springs depends upon the Goodneſs of their Waters, it follows, that where other Waters can be procured, they will alſo have the ſame Effects. And this alſo is confirmed by Experience, as will appear from the Teſtimonies of ſeveral Authors *, who ſhew that the drinking of Water has cured the Obſtructions of the Menſes, the Head-ach, Inflammations of the Eyes, Colds, Rheums, Inflammations, the Gout, the Cholic, *&c.* being uſed either cold or warm, as the Stomach can bear, or the Weakneſs of the Nerves requires.

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* *Riverius, Oper. Lib.* iv. *Cap.* 24. *Celſus, Lib.* i. *Cap.* 15. *Bellonius, Lib.* i. *Epidem. p.* 106. *Sylvaticus, Cap.* 1. *Obſervat.* 1. *Martianus, Rhondeletius, Aviſenna, Lib.* i. *Sect.* 2. *Cap.* XVI. *pag.* 102.

The ſingular Efficacy of pure hot Water alſo appears from the Nature and Uſe of drinking Tea; for it is certainly a Miſtake to attribute all the good Effects of Tea to the leaves of the Plant. The principal Virtue of this Infuſion is doubtleſs owing to the Quantity of the pure hot Water employed in the making it: While the Herb, by its Aſtringency prevents the Fibres of the Body from being too much relaxed and weakened by it. Therefore, as numerous Diſeaſes are attended with a ſtrong Contraction of the Fibres, all Phyſicians, who are well verſed in Practice, will be cautious of indulging too free this aſtringent Plant in ſuch Caſes.

That Tea is an aſtringent or ſtyptic Plant, appears from ſeveral Experiments; particularly from its turning inky with a Solution of Iron, or the chalybeate Waters, like Oak-bark, Balauſtines, and other aſtringent Vegetables. And, to ſpeak a ſerviceable Truth, we have, in our own Country, many Plants, whoſe Virtues far exceed thoſe of the *Indian*

Tea: And Choice ſhould be made of thoſe Plants for medicinal Uſe, according to the Difference of Diſtempers. Thus, for Example, in Diſeaſes of the Breaſt, Paul's Betony, is proper; common Betony in Diſorders of the Nerves; Baum a d Peony-royal in Diſorders of the Uterus; Ground-ivy in Ulcers of the Kidneys; Buck-bean in the Scurvy, *&c.* being reſpectively made into Tea, with the pureſt Water, and drank hot. Again, common Cammomile may be advantageouſly uſed by way of Tea, againſt the Cholic; Parſley in the Stone; Crowfoot in the moiſt Aſthma, *&c.* Roſemary Tea is by many recommended as excellent in many nervous Diſeaſes, *viz.* the Epilepſy, Palſy, and Apoplexy, and for defending the Body, and preventing the catching of Cold, eſpecially if made with the Flowers of the Plant. But in all Teas, it is a Caution of the higheſt Moment, that the Water deſigned for the Infuſion be not ſuffered to boil long, but as it ſimmers ſtrongly, immediately poured upon the Plant, in order to prevent the Loſs of its moſt ſubtile Parts.

It now remains to ſhew, that Water is an an univerſal Remedy, as it aggrees not only with all Conſtitutions, but in all the Indications of Diſorders. And, firſt, the drinking of Water is ſerviceable in every Complexion. In the Sanguine, and thoſe of a ſoft Habit of Body, who have but few of the fineſt kind of Veſſels, it cauſes the Blood and juices to circulate freely; which in this Conſtitution would otherwiſe flow but ſlowly, and thence ſubject to generate Obſtructions in the Viſcera. In bilious Habits, where the Humours are in briſk Motion, it allays the exceſſive Heat, which would otherwiſe evaporate the oily Parts of the Blood, thro' the widened Tubes and Pores of the Body. It likewiſe proves extremely ſerviceable, by diluting and thinning the Viſcidity of the Blood and Juices, in Perſons of Melancholy, and phlegmatic Conſtitutions.

Again, Water proves agreeable to Perſons of all Ages; Children are frequently ſubject to violent Diſorders from the Viſcidity and Acrimony of the Milk they feed on, in which Caſe, beſides Abſorbents, diluting aqueous Remedies, are of great Service. In Youth, the Overload and Thickneſs of the nouriſhing Humours, produce various Diſeaſes; ſuch as Colds, and Eruptions on the Skin, which are excellently remedied by the Uſe of diluting Liquors. And the ſame holds true of the Diſeaſes of grown Perſons, and thoſe in Years; in all which, the drinking of Water is ſerviceable. For Men in the Prime of Life are very ſubject to Inflammations and Fevers; and old Men to ſuch Diſorders as proceed from Stoppages and Obſtructions; in which Circumſtances, there can nothing more proper be given than the fineſt Water, either hot or cold. We find, by daily Experience, what ſevere Diſorders are occaſioned by Irregularity in the menſtrual hæmorrhoidal Flux, and to reduce either to their natural Periods, and preſerve them in their proper Courſe, I am convinced from practical Obſervations, that nothing is more effectual than diluting aqueous Remedies.

It is well known, that a Fulneſs of Blood and Juices brings on many Diſtempers; but to prevent this Fulneſs, the moſt proper Thing is hot Water, made into an Infuſion with Herbs; which thus, by diſolving the glutinous Humours, prevents the Maſs of Blood from increaſing too faſt. A free Uſe of Water is equally ſerviceable in purifying bad Juices; as it readily waſhes off their impure ſaline and droſſy Parts, through all the excretory Paſſages of the Body. Beſides this, the drinking of Water promotes all the Evacuations, keeps the Belly ſoluble, preſerves the urinary Paſſages open, waſhes and cleanſes the ſame from the Adheſion of gravelly or ſtony Matter, and powerfully promotes that moſt healthy Diſcharge of inſenſible Perſpiration. Laſtly, Water is the effectual Vehicle of all other Remedies. Thus antiſcorbutics and vegetable Medicines appropriated to cleanſe the Blood, prove of little Service in correcting the Depravities of the Humours, unleſs their Virtues are carried, by the Aſſiſtance of Water in the Form of Decoctions and Infuſions, into the Juices and remote Parts of the Body. To ſum up all, in whatever Caſes there is a Neceſſity either of altering, evacuating, opening, or reſolving, Water is, at all Times, the beſt of Remedies.

As Water is thus extenſively uſeful, it may be proper to obſerve, that thoſe who cannot procure the pureſt and beſt Sort of it for medicinal Uſe, muſt make uſe of ſuch Rain or River Water as can be had; but if theſe are not ſufficiently pure, the beſt way is to diſtil them; or elſe bail them ſlightly with an Addition of *Burnt-hartſhorn.* It is doubtleſs a ſingular Benefit of Nature, to have large Cities and Countries well watered with wholeſome Springs, which thus bountifully ſupply ſo much better Remedies than thoſe of the Shops. If every prudent and diſintereſted Phyſician would carefully examine into the Waters of the Place where he reſides, he might then confidently hope to practiſe with more Satisfaction to himſelf, and Service to his Patients, than by the common Method, I mean by the miſcellaneous Uſe of numberleſs uncertain Remedies.

FINIS.